

WHAT IS CLAIMED IS:

1. A switching type AC adapter circuit comprising:
 - a primary side circuit for turning, by using a switching element, an input DC voltage applied to a primary winding of a transformer on and off;
 - a secondary side circuit for rectifying and smoothing an AC voltage induced in a secondary winding of said transformer to produce a secondary side output voltage;
 - a constant voltage control circuit for detecting a variation of said secondary side output voltage to produce a constant voltage detection control signal;
 - an overcurrent detection circuit for detecting an overcurrent in said secondary side circuit to produce an overcurrent detected signal;
 - an overvoltage detection circuit for detecting an overvoltage in said secondary side circuit to produce an overvoltage detected signal;
 - a photocoupler for feeding said constant voltage detection control signal as a feedback signal back to said primary side circuit;
 - a switching control circuit for controlling, in response to said feedback signal, on and off of said switching element;
 - a latch circuit, disposed in said primary side circuit, for turning said switching element off when the overcurrent or the overvoltage is detected in said secondary side circuit;
 - a photocoupler control circuit disposed in said secondary side circuit, said photocoupler control circuit being connected to said constant voltage control circuit, to said overcurrent detection circuit, and to said overvoltage detection circuit, said photocoupler control circuit controlling said photocoupler so as to feed said constant voltage detection control signal as said feedback signal back to said primary side circuit, said photocoupler control circuit

controlling said photocoupler so as to turn said photocoupler off when said photocoupler control circuit receives at least one of said overcurrent detected signal and said overvoltage detected signal; and

a primary side detection circuit, disposed in said primary side circuit, for making said latch circuit operate when said primary side detection circuit detects that said photocoupler is turned off.

2. A switching type AC adapter circuit as claimed in claim 1, wherein said constant voltage control circuit, said overcurrent detection circuit, said overvoltage detection circuit, and said photocoupler control circuit are implemented by one integrated circuit.

3. A switching type AC adapter circuit as claimed in claim 1, wherein said primary side detection circuit comprises a voltage detection circuit for detecting a voltage induced in an auxiliary winding of said transformer when said photocoupler is turned off.

4. A switching type AC adapter circuit as claimed in claim 1, wherein said primary side detection circuit comprises a current detection circuit for detecting that a collector current of a phototransistor in said photocoupler does not flow when said photocoupler is turned off.

5. A switching type AC adapter circuit as claimed in claim 1, wherein said primary side detection circuit comprises:

a voltage detection circuit for detecting a voltage induced in an auxiliary winding of said transformer when said photocoupler is turned off; and

a current detection circuit for detecting that a collector current of a photo transistor in said photo coupler does not flow when said photocoupler is turned off.